

Remarks

This application has been carefully reviewed in light of the Office Action mailed October 5, 2007. By this amendment, Applicants have canceled claims 1-19 and added new claims 20-39. No new matter has been introduced by these amendments. Applicants do not admit that these amendments were necessary as a result of any cited art. Applicants respectfully request reconsideration of the above application in view of the following remarks.

Rejection Of Claims 1-19 Under 35 U.S.C. § 103(a) As Being Unpatentable Over Piñas et al. In View Of Turner et al. And In Further View Of Karuppana et al.

Claims 1-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Piñas et al.* (U.S. Patent No. 6,879,057) in view of *Turner et al.* (U.S. Patent No. 6,646,845) and in further view of *Karuppana et al.* (U.S. Patent No. 6,465,908). Claims 1-19 have been canceled and replaced by new claims 20-39. Applicants respectfully request reconsideration of this rejection because the proposed combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.* does not teach, disclose or suggest features of the new claims 20-39.

For instance, the proposed combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.* fails to teach, disclose or suggest claim 19, which recites *inter alia*, “a module SMM operably coupled to the converter DC/DC having an input operably coupled to a second battery assembly and an output coupled to the first battery assembly, wherein the converter DC/DC is adapted to generate a first voltage signal indicative of an amount of voltage measured at the output that is compared to a first predetermined voltage range of the first voltage level and to generate a second voltage signal indicative of an amount of voltage measured at the input as compared to a second predetermined voltage range of the second voltage level . . . wherein the module SMM is adapted to assess a state of the DC/DC converter . . . in response to the first and second voltage signals.”

While *Piñas et al.* may teach a DC/DC converter (see Figure 1, element 5), *Piñas et al.* fails to teach, suggest, or disclose that the DC/DC converter is adapted to

generate a first voltage signal indicative of an amount of voltage measured at the output that is compared to a first predetermined voltage range of the first voltage level and to generate the second voltage signal indicative of an amount of voltage measured at the input that is compared to a second predetermined voltage range of the second voltage level.

Turner et al. fails to cure the deficiencies of *Piñas et al.* In particular, *Turner et al.*, fails to teach, suggest or disclose a DC/DC converter. Assuming, *arguendo*, that the microprocessor 26 of *Turner et al.* is the same as the presently claimed module SMM as asserted by the Examiner (a point in which Applicants do not agree with) (see Office Action mailed 10/5/2007, page 3, ll. 16-17), the microprocessor 26 of *Turner et al.* cannot be properly combined with the DC/DC converter of *Piñas et al.* since *Piñas et al.* fails to teach, suggest or disclose that the DC/DC converter is adapted to generate first and second voltage signals indicative of amounts of voltage measured at the output and the input of the DC/DC converter which are compared to first and second predetermined voltage ranges.

Further, the proposed combination of *Piñas et al.* and *Turner et al.* fails to teach, disclose or suggest the presently claimed module SMM being adapted to assess a state of the converter DC/DC . . . in response to the first and second voltage signals. Applicants respectfully traverse the Examiner's assertion that "[t]hrough sensing the state of charge of the battery (current flow), the Turner controller [microprocessor 26] when combined with the *Piñas* [sic] architecture, senses the operating state of the DC/DC converter." (See Office Action mailed 10/5/2007, page 3, line 20 through page 4, line 1). As presently claimed, the module SMM assesses the state of the converter DC/DC in response to the first and second voltage signals. The first and second voltage signals are based on a comparison of measured voltages at the output and the input of the converter DC/DC to first and second predetermined voltage ranges. Such a characteristic as claimed provides a better assessment as to the state of the converter DC/DC since the voltages are measured directly at the input and the output of the converter DC/DC. Further, the measurement of the voltages at the input and the output of the converter DC/DC may yield for a faster response time in determining the presence of

a short circuit condition particularly if the short circuit condition occurs on the high voltage bus.

Karuppana et al. fails to cure the deficiencies of *Turner et al.* and *Piñas et al.* *Karuppana*, fails to teach, suggest or disclose a DC/DC converter. Further, *Karuppana et al.* cannot be properly combined with the proposed combination of *Turner et al.* and *Piñas et al.*, since the proposed combination of *Turner et al.* and *Piñas et al.* fails to teach, suggest or disclose that the DC/DC converter is adapted to generate first and second voltage signals indicative of amounts of voltage measured at the output and the input of the DC/DC converter which are compared to first and second predetermined voltage ranges and the module SMM being adapted to assess the state of the converter DC/DC based on the first and second voltages.

For at least these reasons, claim 20 is patentable in light of the combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.*, and the other references of record. Further claims 21-29 depending from claim 20, are patentable for the above stated reasons as well as their own limitations.

The proposed combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.* fails to teach, disclose or suggest claim 30, which recites *inter alia*, “receiving a first voltage signal which corresponds to an amount of voltage measured from an output of the converter DC/DC that is compared to a first predetermined voltage range of the first voltage level; receiving a second voltage signal which corresponds to an amount of voltage measured from an input of the converter DC/DC that is compared to a second predetermined voltage range of the second voltage level; assessing a state of the converter DC/DC in response to the first and second voltage signals[.]”

As noted above in connection with Claim 20, *Piñas et al.*, *Turner et al.* and *Karuppana et al.* are not properly combinable since the references fail to teach, suggest, or disclose receiving first and second voltage signals indicative of amounts of voltage measured

at the output and the input of the DC/DC converter which are compared to first and second predetermined voltage ranges and assessing the state of the converter DC/DC based on the first and second voltages.

For at least these reasons, claim 30 is patentable in light of the combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.*, and the other references of record. Further claims 31-38 depending from claim 20, are patentable for the above stated reasons as well as their own limitations.

The proposed combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.* fails to teach, disclose or suggest claim 39, which recites *inter alia*, “receiving a first voltage signal which corresponds to an amount of voltage measured from an output of the converter DC/DC that is compared to a first predetermined voltage range of the first voltage level and receiving a second voltage signal which corresponds to an amount of voltage measured from an input of the converter DC/DC that is compared to a second predetermined voltage range of the second voltage level; assessing a state of the converter DC/DC in response to the first and second voltage signals[.]”

As noted above in connection with Claims 20 and 30, *Piñas et al.*, *Turner et al.* and *Karuppana et al.* are not properly combinable since the references fail to teach, suggest, or disclose receiving first and second voltage signals indicative of amounts of voltage measured at the output and the input of the DC/DC converter which are compared to first and second predetermined voltage ranges and assessing the state of the converter DC/DC based on the first and second voltages.

For at least these reasons, claim 39 is patentable in light of the combination of *Piñas et al.*, *Turner et al.* and *Karuppana et al.*, and the other references of record.

Conclusion

For the foregoing reasons, Applicants believe that the Office Action mailed on October 5, 2007, has been fully responded to. Consequently, in view of the above amendments and remarks, Applicants respectfully submit that the application is in condition for allowance, for which allowance is respectfully requested.

Please charge any fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

If the Examiner believes a telephone interview would advance prosecution of this application in any manner, the Examiner is invited to contact Martin J. Sultana, representative of Applicants, at the Examiner's convenience at 248-358-4400.

Respectfully submitted,

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